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WO 88/09758 A1

(58) Field of Search

UK CL (Edition L) A4A AE, A5G GD GV

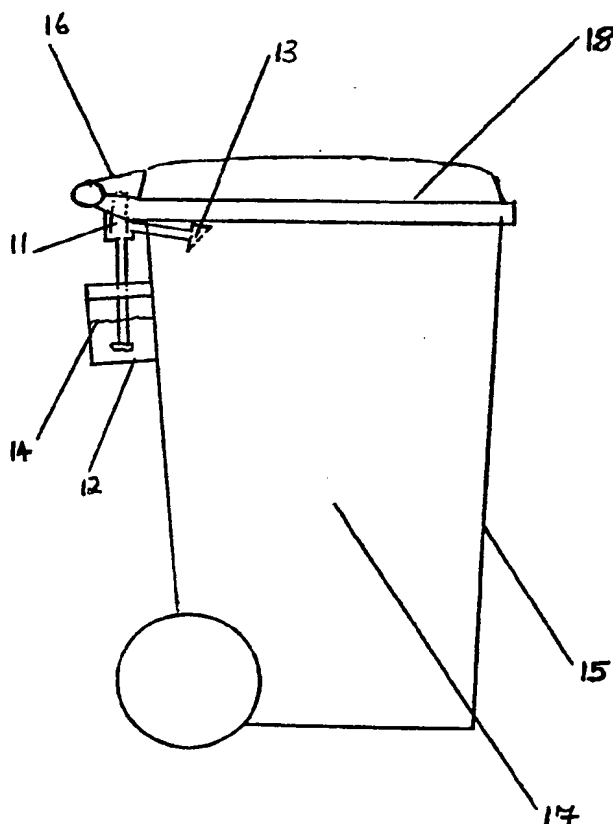
INT CL⁵ A61L, B65F

ONLINE DATABASE: WPI

(54) Wheeliebin freshening and disinfecting

(57) A bin freshener and disinfectant container 12. Is situated on the back of a wheeliebin 15. Aromatic disinfectant 14 is sucked from the container into a two-way non-return valve pressure pump 11 as the bin lid 18 is opened. As the bin lid is closed the two-way non-return valve 11 is pushed down and aromatic disinfectant 14 is expelled through dispersal nozzle 13 into the bin compartment 17. The system is again ready as the bin is opened for use because the two way non-return valve pressure pump will re-prime continuously.

FIGURE 2.



At least one of these pages has been prepared from an original which was unsuitable for direct photoreproduction.

- FIGURE 1. -

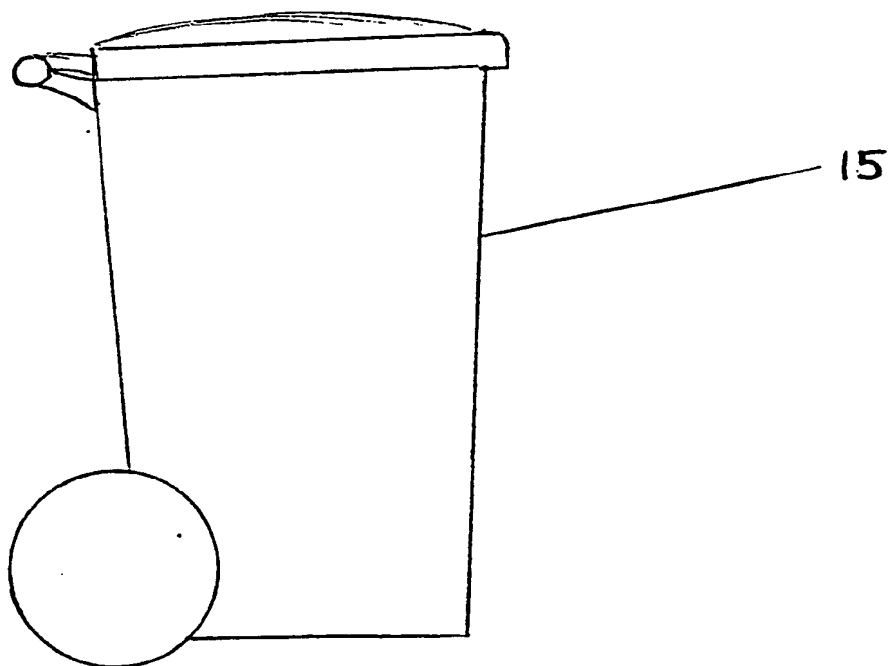
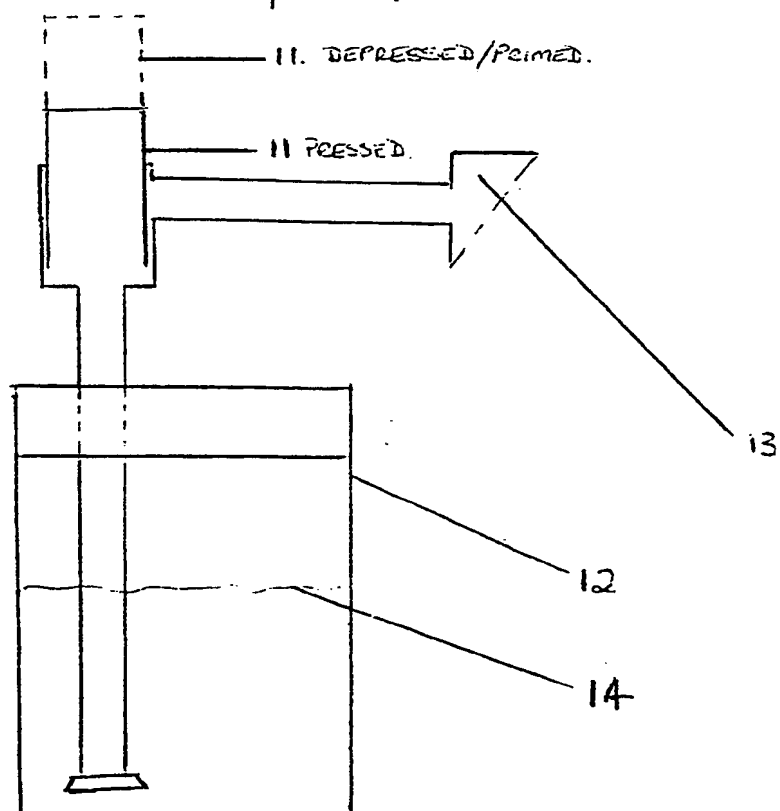


FIGURE 2.

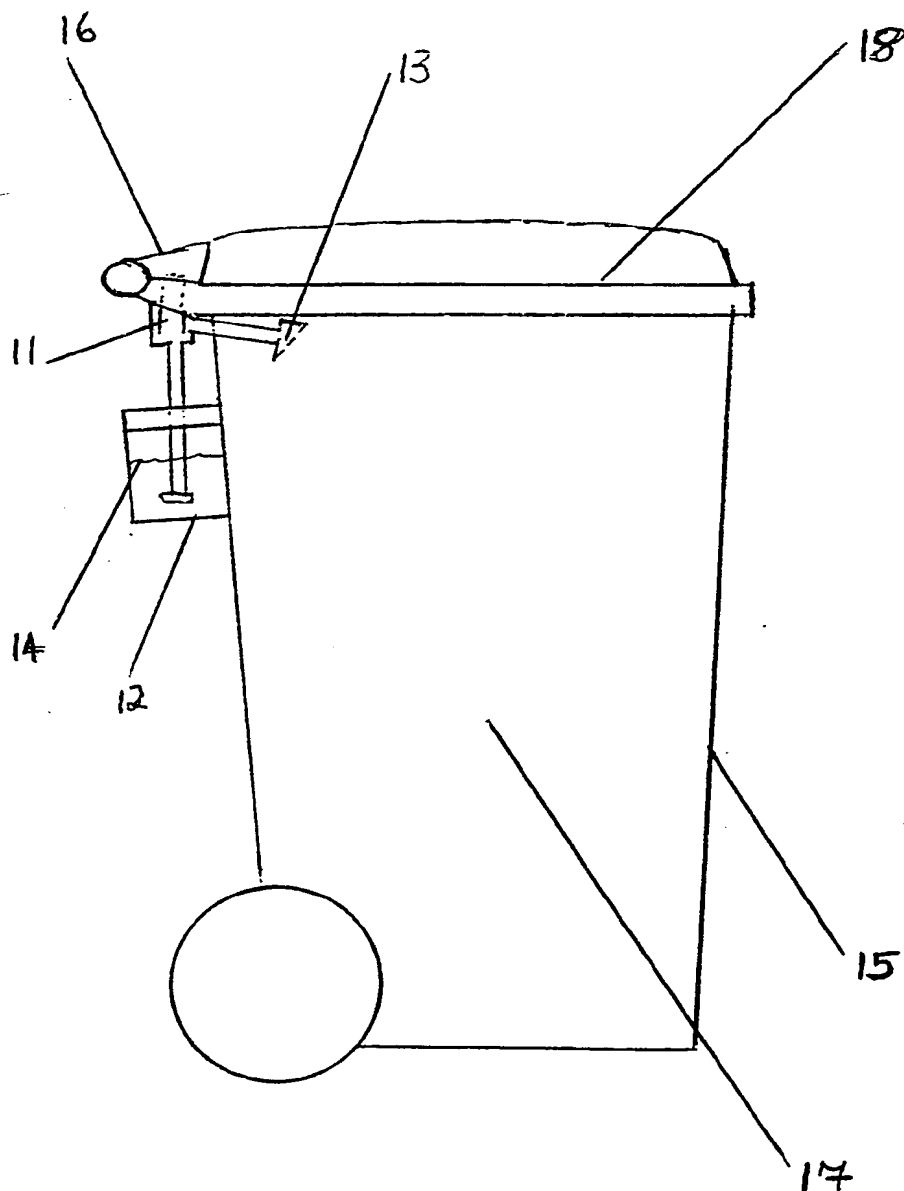


FIGURE 3.

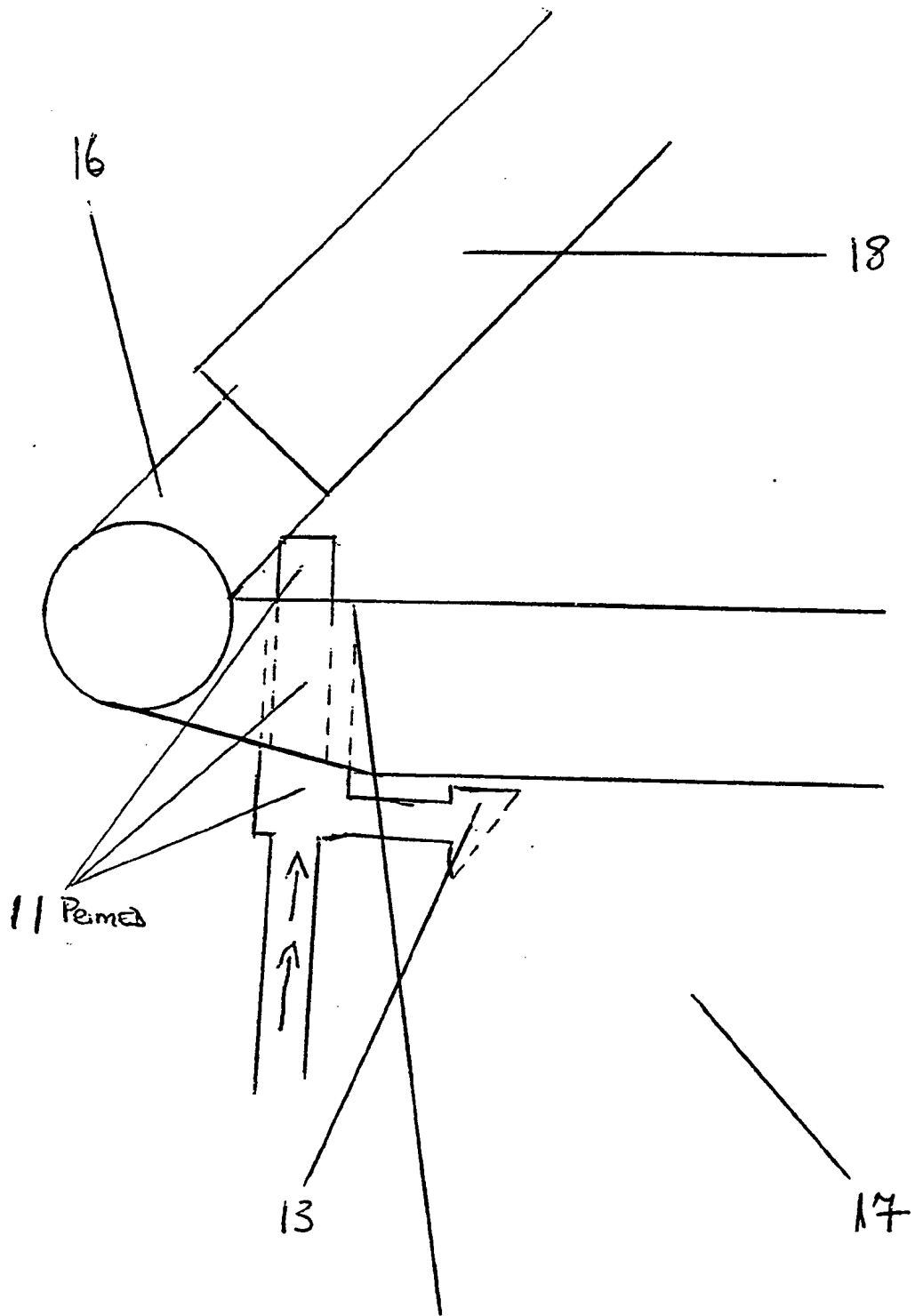


FIGURE 4.

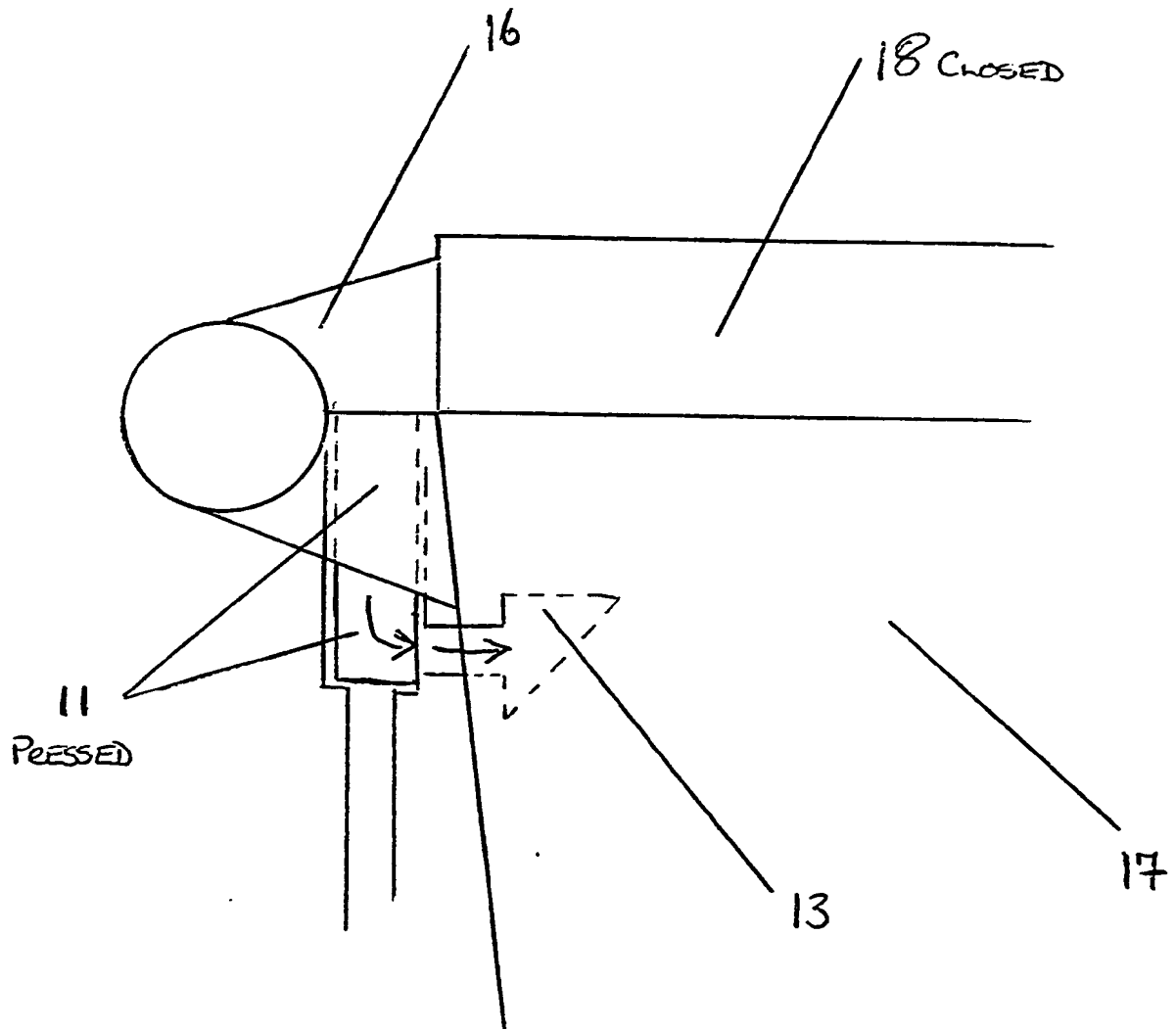


FIGURE 5

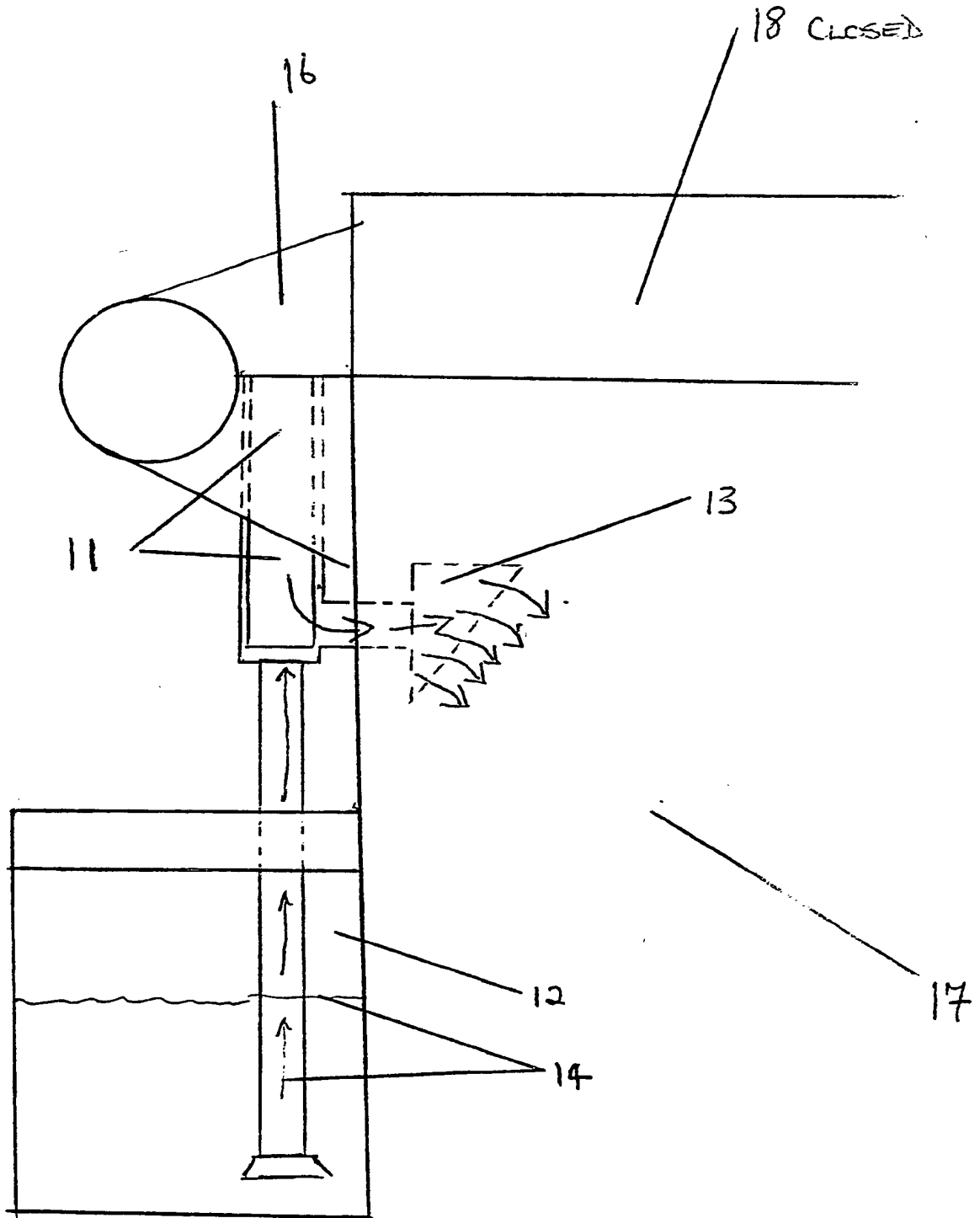
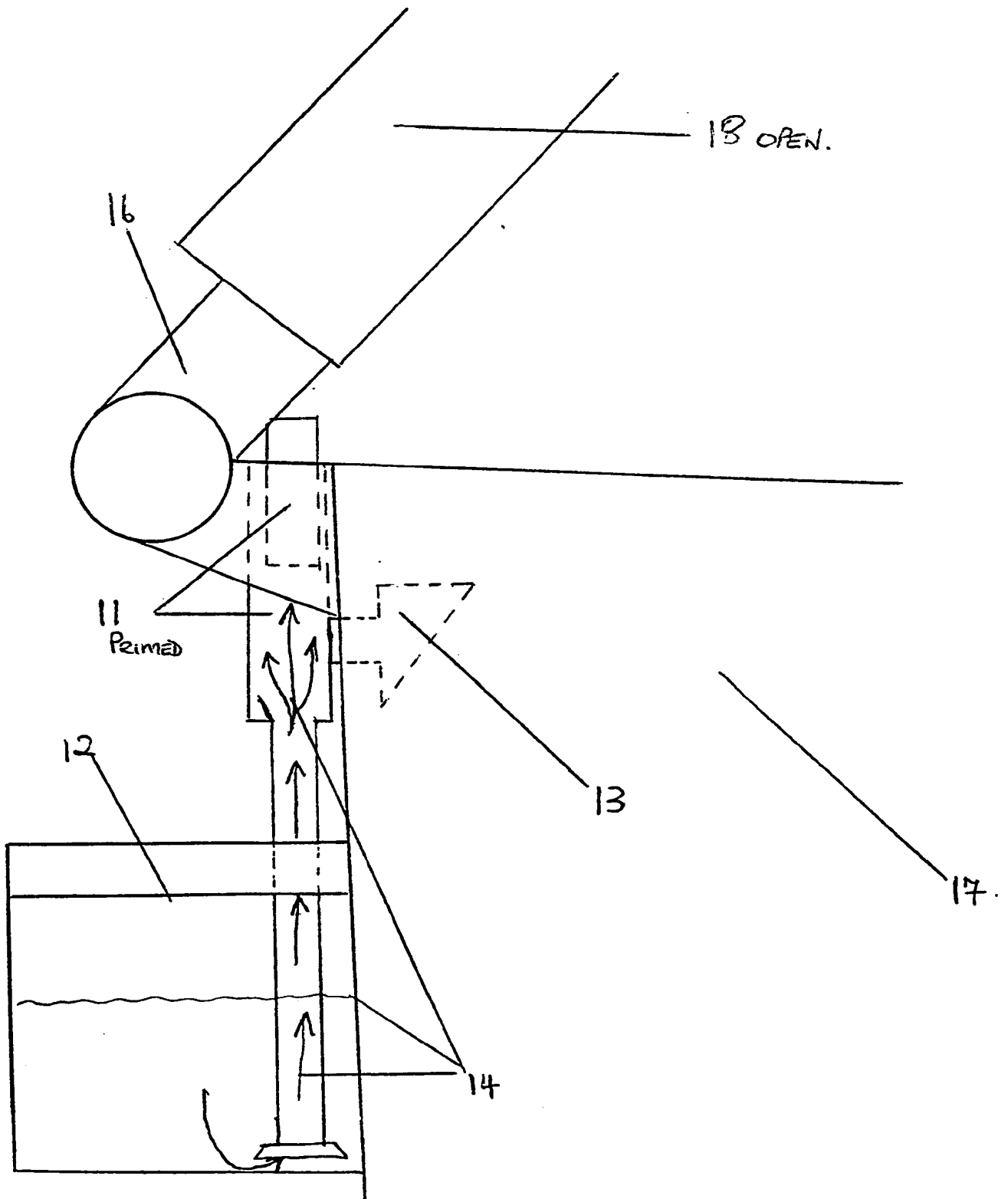


FIGURE 6



WHEELIEBIN FRESHENER AND DISINFECTOR.

THIS INVENTION RELATES TO A WHEELIEBIN FRESHENING AND DISINFECTING DEVICE.

WHEELIEBINS HAVE BEEN BY FAR ONE OF THE GREATEST AIDS TO COUNCIL RECYCLING SYSTEMS: ITS INTRODUCTION, INITIALLY TO A FEW BOROUGH COUNCILS HAS NOW SPREAD NATIONWIDE AND INFACT WORLDWIDE. THE IDEA OF A LARGE WHEELED BIN WITH A LID ON IT, HAS KEPT HOUSEHOLD WASTE CONTAINED AND TIDY FOR HOUSEHOLDERS AND COUNCIL ENVIRONMENTAL HEALTH DEPARTMENTS ALIKE. REFUSE LORRIES HAVE BEEN ADAPTED TO EMPTY THE WHEELIEBINS AND THEIR NEW COUNTERPART: THE SPLIT WHEELIEBIN.

THE SPLIT WHEELIEBIN HAS BEEN INTRODUCED SO THAT COUNCILS ARE ABLE TO SPILT RUBBISH AT SOURCE AIDING AND INCREASING THE RECYCLABILITY OF HOUSEHOLD WASTE. THE ORIGINAL WHEELIEBIN COMPARTMENT IS SPLIT INTO TWO BY WAY OF A PLASTIC INSERT. THIS GIVE THE HOUSEHOLDER TWO COMPARTMENTS; ONE FOR RECYCLABLE GOODS SUCH AS PLASTIC AND CARDBOARD AND ONE FOR RAW PUTRESCIBLES SUCH AS GRASS AND POTATO PEELINGS. CANS AND BOTTLES ARE DEPOSITED BY THE HOUSEHOLDER AT LOCALLY SITUATED RECYCLING BANKS SUPPLIED BY THE COUNCIL.

THIS SYSTEM HAS HOWEVER LED TO A NUMBER OF POINTS OF COMPLAINT FROM THE HOUSEHOLDERS. MAINLY BECAUSE RAW PUTRESCIBLES IN THE BIN ARE NOT ALLOWED TO BE BAGGED. THE COMPLAINT OF INCREASE OF FLIES AND MAGGOTS IS OFTEN RECEIVED BY THE COUNCIL BUT BY FAR THE BIGGEST COMPLAINT IS THAT OF THE HEALTH RISK AND SMELL OF THIS SYSTEM. A FRESHENER AND DISINFECTING DEVICE FIXED TO THE BACK OF A WHEELIEBIN WOULD COMBAT THE PROBLEM OF SMELL AND HEALTH RISK SUFFERED BY THE HOUSEHOLDER, WHICH IN TURN WOULD REDUCE THE COMPLAINTS MADE TO COUNCIL ENVIRONMENTAL HEALTH DEPARTMENTS ABOUT THESE PROBLEMS.

THIS DEVICE COULD BE FITTED TO A BIN IN THE FACTORY OR AT A HOUSEHOLD OF THOSE WHO ALREADY HAVE A BIN. A TWO WAY NON RETURN VALVE PRESSURE PUMP IS SITUATED BETWEEN THE HINGE OF THE WHEELIEBIN. JUST BELOW THE HINGE IS A 500ML BOTTLE SECURED TO THE BACK OF THE BIN. THIS IS CONNECTED BY WAY OF PLASTIC TUBE TO THE TWO WAY NON RETURN VALVE PRESSURE PUMP, SITUATED ON THE HINGE. FROM THE TWO WAY NON RETURN VALVE PRESSURE PUMP ANOTHER TUBE LEADS THROUGH A HOLE INTO THE BIN COMPARTMENT, ACTING AS AN OUTLET FROM THE PUMP, ON THE END OF THIS TUBE IS A DISPERSAL NOZZLE. THIS GIVES A CONTAINER FULL OR AROMATIC DISINFECTANT THAT IS JOINED TO A PUMP WHICH INTAKES AROMATIC DISINFECTANT AND EXPELS INTO THE BIN VIA THE PUMPS OUTLET NOZZLE. ALL OF THIS ACTIVATED BY THE OPENING AND CLOSING OF THE LID. AS THE TWO WAY NON RETURN VALVE PRESSURE PUMP IS PRESSED AND DEPRESSED BETWEEN THE BIN LID HINGE.

A SPECIFIC EMBODIMENT OF THE INVENTION WILL NOW BE DESCRIBED BY WAY OF EXAMPLE WITH REFERENCE TO THE ACCOMPANYING DRAWINGS IN WHICH:

- FIGURE 1. SHOWS THE DEVICE. AND WHEELIEBIN.
- FIGURE 2. SHOWS THE FRESHENER AND DISINFECTING DEVICE SITUATED IN POSITION ON THE WHEELIE BIN.
- FIGURE 3. SHOWS THE SITUATION OF THE TWO WAY NON RETURN VALVE PRESSURE PUMP SITUATED BETWEEN THE HINGES ON THE BIN LID. OPEN.
- FIGURE 4. SHOWS THE ACTIVATION OF PRESSURE ON THE TWO WAY NON RETURN VALVE PRESSURE PUMP AS THE BIN LID IS CLOSED.
- FIGURE 5. SHOWS THE EXPULSION OF AROMATIC DISINFECTANT FROM A NOZZLE SITUATED INSIDE THE BIN AS THE TWO WAY NON RETURN VALVE PRESSURE PUMP IS ACTIVATED BY THE LID CLOSING ON THE BIN.
- FIGURE 6. SHOWS DEVICE RE-PRIMED AND SUCKING UP AROMATIC DISINFECTANT AS BIN LID IS LIFTED FOR RE-USE, READY FOR DISPERSAL INTO BIN AS LID IS CLOSED ONCE MORE.

REFERRING TO THE DRAWINGS, THE DEVICE COMPRISES OF TWO WAY NON RETURN VALVE PRESSURE PUMP.11. A 500ML BOTTLE CONTAINER.12. A DISPERSAL NOZZLE.13. AND AROMATIC DISINFECTANT.14. SITUATED ON A WHEELIEBIN.15. BETWEEN THE HINGE ON LID.16. AND THE INNER COMPARTMENT OF THE BIN.17. USING THE BIN LID.18. TO ACTIVATE THE DEVICE AS IT OPENS AND CLOSES.

THE BOTTLE CONTAINER.12. IS FILLED WITH AROMATIC DISINFECTANT.14. AND SITUATED TO THE REAR OF THE BIN AS SHOWN IN FIGURE.2. JUST BELOW THE LID HINGE.16. AS SHOWN IN FIGURE.3. AS PRESSURE IS EXERTED ON TWO WAY NON RETURN VALVE PRESSURE PUMP.11. BY THE LID.18. AS SHOWN IN FIGURE.4. THE AROMATIC DISINFECTANT.14. IS DISPERSED THROUGH NOZZLE.13. INTO THE BIN COMPARTMENT.17. AS SHOWN IN FIGURE 5. ONCE THE BIN LID.18. IS OPENED AGAIN THE TWO WAY NON RETURN VALVE PRESSURE PUMP.11. IS RE-PRIMED AS IT SUCKS UP AROMATIC DISINFECTANT.14. FROM BOTTLE CONTAINER.12. AS SHOWN IN FIGURE.6. THIS MEANS THE OPERATION IS CONTINUALLY ACTIVATED BY THE OPENING AND CLOSING OF THE BIN. AN AROMATIC DISINFECTANT IS CONTINUOUSLY SPRAYED INTO THE BIN EVERYTIME A HOUSEHOLDER OPENS IT TO DEPOSIT RUBBISH IN IT. THE HOUSEHOLDER DOES NOT EVEN HAVE TO CONSCIOUSLY HAVE TO ACTIVATE THE DEVICE.

CLAIMS

1. A TWO WAY NON RETURN VALVE PRESSURE PUMP IS SITUATED BETWEEN THE HINGE OF THE WHEELIEBIN. JUST BELOW THE HINGE IS A 500ML BOTTLE SECURED TO THE BACK OF THE BIN. THIS IS CONNECTED BY WAY OF PLASTIC TUBE TO THE PUMP ON THE HINGE. FROM THE TWO WAY NON RETURN VALVE PRESSURE PUMP ANOTHER TUBE LEADS THROUGH A HOLE IN THE BACK OF THE BIN INTO THE BIN COMPARTMENT. ON THE END OF THIS TUBE IS A DISPERSAL NOZZLE. THIS ACTS AS AN OUTLET FROM THE PUMP. THIS THEN GIVES A TWO WAY NON RETURN VALVE PRESSURE PUMP WHICH HAS AN INTAKE FROM THE BOTTLE OF AROMATIC DISINFECTANT AND AN OUTLET INTO THE BIN COMPARTMENT VIA THE DISPERSAL NOZZLE. THIS ALL ACTIVATED BY THE OPENING AND CLOSING OF THE BIN LID.
2. A BIN FRESHENER DISINFECTANT DEVICE CREATED BY THE COMBINATION OF A WHEELIEBIN AND A TWO WAY NON RETURN VALVE PRESSURE PUMP, CONTAINER AND DISPERSAL NOZZLE AS CLAIMED IN CLAIM 1.
3. A BIN FRESHENER DISINFECTANT DEVICE OPERATED BY USING THE PRESSURE OF A BIN LID OPENING AND CLOSING TO OPERATE THE SAME TYPE OF PUMP OR SIMILAR PUMP AS CLAIMED IN CLAIM 1. AND CLAIM 2.
4. A BIN FRESHENER AND DISINFECTANT DEVICE THAT DISPERSES DISINFECTANT THROUGH A NOZZLE SITUATED IN THE BACK OF A BIN AS CLAIMED IN CLAIM 1. CLAIM 2. CLAIM 3.
5. A BIN FRESHENER DISINFECTANT DEVICE SITUATED ON THE BACK OF A WHEELIE BIN SO AS TO NOT INTERFERE WITH MECHANICAL EMPTYING DEVICE USED BY COUNCILS ATTACHED TO FRONT OF BIN WHEN LIFTED BY REFUSE LORRIES AS CLAIMED IN CLAIM 1 AND ANY OTHER PRECEEDING CLAIM.
6. A BIN FRESHENER DISINFECTING DEVICE AS SUBSTANTIALLY DESCRIBED HEREIN WITH REFERENCE TO FIGURES 1 - 6 OF ACCOMPANYING DRAWINGS.

Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

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Relevant Technical fields

(i) UK Cl (Edition L) A5G GD GV; A4A (AE)

(ii) Int Cl (Edition 5) A61L, B65F

Search Examiner

P N DAVEY

Databases (see over)

(i) UK Patent Office

(ii) ONLINE DATABASES: WPI

Date of Search

20.7.93

Documents considered relevant following a search in respect of claims 1-6

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	WO 88/09758 A1 (EMERTON ET AL) see for example Claim 1	1 at least

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X: Document indicating lack of novelty or of inventive step.

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